Surrogate Test Method

Goal

Evaluate the data from the Confirmation Cleaning Study to ascertain if one type of sampling method and/or a single compound could be used to determine if additional cleaning events in an apartment was necessary

Evaluation

- Several types of sampling methods used
  - Air sampling
  - Microvacuum sampling
  - Wipe sampling
- Data evaluated to determine if one particular method could be used as a surrogate method
- Post-cleaning data from residential apartments were used for this evaluation

Percentage of Apartments (13) Meeting Health-based Benchmarks by Cleaning Event			
Compound	First Cleaning	Second Cleaning	Third Cleaning
Asbestos	**38%**	75%	100%
MMVF	92%	**0%**	100%
Lead	69%	100%	
Alpha-quartz	92%	100%	
Dioxin	100%		
PAHs	100%		

Comparison of Post-First Cleaning Analytical Results

Apt.	Reason	Asbestos	Lead (Max)
2A	Asbestos	All overloaded	11.3 ug/ft^2
3B	Asbestos & Lead (W)	All overloaded	51.6 ug/ft^2
3C	Asbestos & Lead (M)	All overloaded	26.9 ug/ft^2
3D	Asbestos	All overloaded	9.8 ug/ft^2
4A	Asbestos & α-quartz	All overloaded	10.7 ug/ft^2
4D	Lead (W)	2 ND & 1 @ 0.0009 s/cc	66 ug/ft^2 (R)Blank contamination
5A	Lead (W)	2 ND & 1 @ 0.0009 s/cc	43.5 ug/ft^2
5C	Asbestos & MMVF	All overloaded	10.3 ug/ft^2

Number of Additional Cleaning Events Required Based on Sampling Method

Compound	Sampling Method(s)	Number of Additional Cleaning Events	Percentage
Total	Air, mircrovacuum, and wipe	11	100%
Combination (2 or more)	Air, microvaccum or wipe	6	55%
Asbestos	Air via PCMe	9	82%
Lead	Wipe	3	27%
Lead	Microvacuum	1	9%
MMVF	Air	3	27%
Silica	Air	1	9%
PAH	Wipe	0	0%
Dioxin	Wipe	0	0%

Risk Management

- Asbestos and MMVF were the only contaminants that required three cleaning events
- Asbestos had the lowest percentage of cleared apartments for each cleaning event (MMVF one exception after second cleaning)
- Asbestos was solely or in conjunction with other compounds responsible for the majority of additional cleaning events
- Potential for long-term health impacts from asbestos exposure (i.e., cancer) was deemed important

Risk Management

- Asbestos sampling method measured asbestos fibers but also indirectly measured particulate matter due to overloaded filters
- Data suggests that the testing methodology associated with asbestos air sampling is very sensitive to particulate matter and that an indoor environment needs to be relatively clean of particulate matter to achieve valid PCMe results
- Concluded asbestos sampling with PCM, PCMe, and TEM AHERA analysis was most conservative sampling method, when overloaded filters were included in the decision tree for deciding if additional cleaning events were required